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SUBJECT: WATER AND LAND USE IN SOUTHEASTERN YUNNAN

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¶1. (SBU) Summary. Although southeastern Yunnan boasts good soils, warm growing seasons, and adequate rainfall, its geology makes agriculture difficult in many areas. Land use patterns show a predominance of Han people in well-watered areas, with minorities tending to farm highland regions with little usable water. A Chinese-U.S. project aims to map water resources, and perhaps lay a foundation for better irrigation of the uplands. End summary.

¶2. (U) In connection with a visit from a Bangkok-based USAID official, Congenoff recently visited Kaiyuan and Mengzi Prefectures in southeastern Yunnan Province to inspect a project undertaken as part of the China Environmental Health Project. Known as the "Technical Program for Water," the project brings together researchers from Western Kentucky University and Chongqing's Southwest University of China to map underground water resources and determine their availability for agricultural use as well as their vulnerability to pollution.

THE KARST LANDSCAPE: BEAUTIFUL, BUT DRY

¶3. (U) One defining feature of the southeast Yunnan landscape is the predominance of limestone karst formations. These formations are often stunningly beautiful (one area is called the "Stone Forest"), but their extremely porous nature means that the soil in such areas retains little rainfall, especially when the topography is mountainous. Instead, rain falling on such areas drains into underground aquifers, and then into the valleys below. As a result, higher elevations are quite poor agriculturally, while the valleys below are well-watered and fertile. Perhaps not surprisingly, many of the region's minority peoples tend to live in the mountainous areas, while Han and Hui (Chinese Muslims of Han ancestry) dominate the valleys.

¶4. (SBU) According to a presentation made by Western Kentucky University representatives, almost 100 million people in China live in karst landscape regions, and at least 10 million of those are classified as "impoverished." Water scarcity is a major contributor to rural poverty in these areas, and post-1958 deforestation has increased water runoff rates. In addition, the area boasts significant mineral resources (especially tin and lead), and the government's emphasis on developing mineral extraction and processing industries has resulted in significant groundwater pollution, reducing further the amount of usable water.

15. (U) Previous research has established the general direction of underground water flows in the area, but the exact location of the channels remains unknown. The primary aim of the Technical Program for Water is to map those aquifers, with the idea that local officials and residents may be able eventually to tap into them for irrigation purposes.

LITTLE WATER, LITTLE CASH

16. (SBU) Visits to upland villages confirmed the relative poverty of the area. One example was the village of Laoyang, about a two hour drive east of Kaiyuan. According to the village chief Chen Yonghua, Laoyang is home to about 250 people, a mixture of Han, Yi, Hui, Miao, and Zhuang ethnic groups. However, Cheng said his position of village chief included presiding over nine other villages in the area, with a total population of about 3,000.

17. (SBU) Although rural households were supposedly limited to two children each, Chen admitted (somewhat sheepishly) that most families in the area had three or more children. Asked about fines or penalties for exceeding the legal number, Chen said only that "those things are handled by the county government."

18. (SBU) Laoyang was home to a one-room, one-teacher school, offering the first three grades only. Students who want further education have to travel to a neighboring village several miles away - Chen said that very few local children completed the "compulsory" nine years of education. He added that local residents elected him as chief since he was the best educated person in the village, having attended vocational high school.

19. (SBU) Annual per capita income in the area is about 1200 RMB (USD 155), and most cash is generated from the sale of tobacco. Chen said that most subsistence crops are fertilized with night

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soil and pig manure, although tobacco requires a special chemical fertilizer. Later discussions with farmers in the nearby village of Shidong confirmed tobacco is the major source of cash from agriculture in the area: one farmer volunteered the information that he had 10 mu (about 1.2 acres) of tobacco under cultivation, and that he cleared about 600 RMB (USD 78) per year in profit from each mu. Most male farmers said they often go to urban areas in the fall and winter in search of construction work.

110. (SBU) Water resources are scant in the upland areas. At the center of Laoyang was a fetid-looking small pond, from which villagers were drawing water in small buckets. Some houses were furnished with small cisterns to catch rain water. Most residents readily agreed that an increase in usable water would bring significant increases in agricultural productivity.

COMMENT

111. (SBU) Balancing water resources and land use in the Kaiyuan area appears to be a major challenge for government planners. Existing water use patterns strongly favor Han residents, while upland minority farmers turn to tobacco (and seasonal construction jobs) to earn badly needed cash. In addition, mineral extraction industries provide jobs and supply metal ore for China's development, but also contribute significantly to water contamination. The Technical Program for Water may give officials a valuable tool for distributing water more evenly - but whether they will actually be able to make such difficult decisions fairly still remains to be seen.

112. (U) This cable has been cleared by Embassy Beijing.
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